CLAIMS

1. A method for obtaining traces of a program, comprising:

executing an original set of instructions;

switching execution from the original set of instructions to an instrumented version of the original set of instructions; and

generating traces through execution of one or more instrumentation instructions contained within the instrumented version of the original set of instructions.

2. A method for obtaining traces of a program as recited in claim 1, wherein the switching of execution from the original set of instructions to the instrumented version of the original set of instructions occurs at a location of known state in the original set of instructions.

3. A method for obtaining traces of a program as recited in claim 1, further comprising:

triggering the switching of execution from the original set of instructions to the instrumented version of the original set of instructions, wherein the triggering is based on an elapsed time of execution, the triggering causing the switching of execution to occur at a next location of known state in the original set of instructions.

4. A method for obtaining traces of a program as recited in claim 3, wherein the triggering is performed such that execution of the original set of instructions accounts for more than about 90 percent of the elapsed time of execution.

5. A method for obtaining traces of a program as recited in claim 1, further comprising:

triggering a switching of execution from the instrumented version of the original set of instructions back to the original set of instructions, wherein the triggering is based on an elapsed time of execution, the triggering causing the switching of execution to occur at a next location of known state in the instrumented version of the original set of instructions; and

switching execution from the instrumented version of the original set of instructions back to the original set of instructions.

6. A method for obtaining traces of a program as recited in claim 5, wherein the next location of known state in the instrumented version of the original set of instructions corresponds to an instruction common to both the instrumented version of the original set of instructions and the original set of instructions.

7. A method for obtaining traces of a program as recited in claim 5, wherein the triggering is performed such that execution of the instrumented version of the original set of instructions accounts for less than about 10 percent of the elapsed time of execution.

8. A method for obtaining traces of a program as recited in claim 1, wherein execution of the instrumented version of the original set of instructions is performed by an emulator.

9. A method for obtaining traces of a program, comprising:

executing an original code;

switching execution from the original code to an instrumented code;

executing the instrumented code;

generating traces; and

switching execution from the instrumented code to the original code.

10. A method for obtaining traces of a program as recited in claim 9, further comprising:

triggering the switching of execution from the original code to the instrumented code, the triggering causing the switching of execution to occur at a next location of known state in the original code.

11. A method for obtaining traces of a program as recited in claim 10, wherein the triggering is based on an elapsed time of execution, the triggering being performed such that execution of the original code accounts for more than about 90 percent of the elapsed time of execution.

12. A method for obtaining traces of a program as recited in claim 9, further comprising:

triggering the switching of execution from the instrumented code to the original code, the triggering causing the switching of execution to occur at a next location of known state in the instrumented code.

13. A method for obtaining traces of a program as recited in claim 12, wherein the next location of known state in the instrumented code corresponds to an instruction common to both the instrumented code and the original code.

14. A method for obtaining traces of a program as recited in claim 12, wherein the triggering is based on an elapsed time of execution, the triggering being performed such that execution of the instrumented code accounts for less than about 10 percent of the elapsed time of execution.

15. A method for obtaining traces of a program as recited in claim 9, wherein both switching execution from the original code to the instrumented code and switching execution from the instrumented code to the original code are performed using return addresses during processing of function calls.

16. A method for obtaining traces of a program as recited in claim 9, further comprising:

defining a map of instruction addresses, the map of instruction addresses identifying correspondences between instruction addresses in the original code and instruction addresses in the instrumented code.

17. A method for obtaining traces of a program as recited in claim 16, wherein both switching execution from the original code to the instrumented code and switching execution from the instrumented code to the original code are performed using the map of instruction addresses.

18. A computer readable media containing program instructions for obtaining traces of a program, comprising:

program instructions for executing an original code;

program instructions for switching execution from the original code to an instrumented code;

program instructions for executing the instrumented code;

program instructions for generating traces; and

program instructions for switching execution from the instrumented code to the original code.

19. A computer readable media containing program instructions for obtaining traces of a program as recited in claim 18, further comprising:

program instructions for triggering a switching of execution from the original code to the instrumented code, the program instructions for triggering causing the switching of execution to occur at a next location of known state in the original code.

20. A computer readable media containing program instructions for obtaining traces of a program as recited in claim 19, wherein the program instructions for triggering are based on an elapsed time of execution, the program instructions for triggering causing execution of the original code to account for more than about 90 percent of the elapsed time of execution.

21. A computer readable media containing program instructions for obtaining traces of a program as recited in claim 18, further comprising:

program instructions for triggering a switching of execution from the instrumented code to the original code, the program instructions for triggering causing the switching of execution to occur at a next location of known state in the instrumented code.

22. A computer readable media containing program instructions for obtaining traces of a program as recited in claim 21, wherein the next location of known state in the instrumented code corresponds to an instruction common to both the instrumented code and the original code.

23. A computer readable media containing program instructions for obtaining traces of a program as recited in claim 21, wherein the program instructions for triggering are based on an elapsed time of execution, the program instructions for triggering causing execution of the instrumented code to account for less than about 10 percent of the elapsed time of execution.

24. A computer readable media containing program instructions for obtaining traces of a program as recited in claim 18, wherein the program instructions for switching execution from the original code to the instrumented code and the program instructions for switching execution from the instrumented code to the original code are defined to use return addresses during processing of function calls to effect the switching.

25. A computer readable media containing program instructions for obtaining traces of a program as recited in claim 18, further comprising:

program instructions for defining a map of instruction addresses, the map of instruction addresses identifying correspondences between instruction addresses in the original code and instruction addresses in the instrumented code.

26. A computer readable media containing program instructions for obtaining traces of a program as recited in claim 25, wherein the program instructions for switching execution from the original code to the instrumented code and the program instructions for switching execution from the instrumented code to the original code are defined to use the map of instruction addresses to effect the switching.